



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,407	01/14/2004	Kouta Fukui	FS-F03223-01	2618

37398 7590 04/20/2006

TAIYO CORPORATION
401 HOLLAND LANE
#407
ALEXANDRIA, VA 22314

EXAMINER

CHEA, THORL

ART UNIT	PAPER NUMBER
----------	--------------

1752

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,407

Applicant(s)

FUKUI, KOUTA

Examiner

Thorl Chea

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,7 and 10-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4,6,7 and 10-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 17, 2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-7, 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of EP 1168066 (EP'066) in view of and Siga et al (US Patent No. 4,332,889) and Hirabayashi (US 2002/0123016A1).

EP'066 discloses a photothermographic material as a whole wherein the material containing photosensitive silver halide, a non-photosensitive organic silver salt, a reducing agent, a binder and a silver-saving agent, and wherein the material exhibit an average contrast of 2.0 to 6.0. See the silver halide include any one of silver chloride, silver chlorobromide, silver iodochlorobromide, silver bromide, silver iodobromide and silver iodide on page 5, lines 24-25; the silver saving agent on page 8, formula [H], (G), (P); the reducing agent such as bisphenols reducing agent on page 13, [0077] and 1-1-bis(2-hydroxy-3,5,5-trimethylhexane on page 64, [0225]; Table 2-1 to 2-4 on pages 77-80 which exemplified two light sensitive layer, wherein

Art Unit: 1752

the lower contains silver saving agent; and the image gradation on page 70, Table 1 having value from 2.9 to 3.5. Page 38, [0115] discloses that "it is preferred to use sensitizing dyes exhibiting spectral sensitivity suitable for spectral characteristic of light sources of various laser imager or scanner".

Siga et al disclose in column 6, lines 43-68 the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contain, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5." Hirabayashi discloses a photothermographic material having absorption maximum at 350 nm to 450 nm and different type of laser light source conventional used in the process of exposing the photothermographic material such as coherent light such as green laser of 500 nm to 600 nm and long wave laser such having emission in the near infrared region. Hirabayashi discovered that "after subjected to thermal processing, the sensitizing dyes remains on halftone dot images, producing problem that dot image quality or linearity is lowered, resulting to so called deterioration due to the remaining dye stain. It was found that the use of recently developed short wave laser having an emission at

Art Unit: 1752

350 nm to 450 nm to halftone dot images on the photothermographic material resulted in superior images to those obtained by commonly known long wave laser, without causing stains. See page 1, [0005].

EP'066 suggest the use of silver iodide and the use sensitizing dyes exhibiting spectral sensitivity suitable for spectral characteristic of light sources of various laser imager or scanner to spectrally sensitize the silver halide emulsion, but fails to exemplified the use of the silver iodide in the photothermographic material or a use laser light source having wavelength of 350 nm to 450 nm to exposed the photothermographic material or a photothermographic material that is capable of forming an image using laser light source having wavelength of 350 nm to 450 nm. The photothermographic material exemplified in EP'066 is exposed to laser source having wavelength in the infrared region and the silver halide emulsions are spectrally sensitize in the IR region to match the wavelength of the laser source. However, the selection of silver halide such as silver iodide or the type of laser light source would have been found prima facie obvious in view of Siga et al and Hirabayashi. Siga et al discloses the composition halide containing silver iodide and silver bromide within molar ratio of 30/70 to 98/2 in order to balance the sensitivity and storage stability of the photothermographic material. The silver halide having iodide content is less sensitive to light as a result it provides more stability to the photothermographic material. Hirabayashi teaches that the problem associates with photothermographic material containing infrared dye and the improvement of photothermographic material that is sensitive to wavelength of 350 nm to 450 nm in term of superior halftone dot image.

Art Unit: 1752

It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the silver iodide taught in EP'066 or silver halide having composition taught in Siga et al in combination with the use of silver halide emulsion sensitive to laser light having wavelength of 350 nm to 450 nm to provide a photothermographic material with superior halftone dot image, and thereby provide a material as claimed.

Response to Arguments

4. Applicant's arguments filed January 17, 2006 have been fully considered but they are not persuasive for the reason set forth in the above rejection.

The applicants argue that EP'066, exposure is conducted with light having a wavelength in red or in the infrared region, which region is in far longer than the region from 350 nm to 450 nm. There is no teaching in the reference that the high maximum density can be obtained by the exposure of the blue laser light having a short wavelength as in the present invention. The worker of ordinary skill in the art would not have conceived to combine Siga et al with EP'066 since the image forming method and mechanism of the photothermographic material of Siga et al is different from those of usual-type photothermographic material (photothermographic material having a photosensitivity without being subjected to a preliminary treatment) such as the photothermographic material of the present invention or photothermographic material described in EP'066.

The argument is not persuasive. The argument is related to the process for forming the material using light exposure having wavelength within the region of 350 nm to 450 nm while the claimed invention is directed to the claiming of a photothermographic material. The limitation in claim 1 such as "the photothermographic material is capable of being exposed by a

Art Unit: 1752

laser light source having wavelength of 350 nm to 450 nm” is related to the capability of the material rather than what the material is. The claim is not directed to the photothermographic material that is sensitive to laser light source having wavelength of 350 nm to 450 nm. Therefore, the limitation presented in the claim fails to define the characteristic of the material. EP’066 may be exposed to light having wavelength other than that having wavelength of 350 nm to 450 nm, but this exposure would have been understood by the worker of ordinary skill in the art since the material was designed to be exposed to the wavelength other than UV light and the silver halide is spectrally sensitized accordingly to that wavelength. EP’066 discloses on page 38, [0115] discloses that “it is preferred to use sensitizing dyes exhibiting spectral sensitivity suitable for spectral characteristic of light sources of various laser imager or scanner”. Therefore, the material taught in EP’066 is designed accordingly to the available light source used in the exposure. The laser having wavelength of 350 nm to 450 nm is taught in Hirabayashi. Hirabayashi discloses the problem associated with photothermographic material containing infrared dye due to the longer and the improvement of photothermographic material that is sensitive to wavelength of 350 nm to 450 nm in terms of superior halftone dot image. Therefore, the worker of ordinary skill in the art would have used the light source having wavelength of 350 nm to 450 nm in lieu of light source having longer wavelength and adjusted the sensitivity of the photothermographic material accordingly to the wavelength of that light source.

EP’066 discloses the use of silver iodide among the other known silver halide grains, and the selection of the silver iodide would have been obvious since it has been known in Siga that the silver iodide would provide the photothermographic material in both stability and sensitivity. Therefore, the worker of ordinary skill in the art would have selected the silver iodide taught in

Art Unit: 1752

EP'066 or silver halide having silver iodide and silver bromide having ratio taught in Siga et al with an expectation of achieving a material balance in stability and sensitivity.

The results shown in Table 257 have been considered, but fails to overcome the rejection above. The results shown in the specification is not commensurate with the scope of the claimed invention. The silver halide emulsions in Table 1, emulsion A contains a combination of pure silver iodide. See for instance page 228, line 12, and the silver emulsion C contains silver bromoiodide having bromide content of 3.5 mole %. The scope of the claim invention contains silver halide having iodide from 10 mole % to 100 mole %. There is no disclosure in the specification to show as to why the silver halide having silver iodide less than pure silver iodide provide a results to that containing pure silver iodide. The results are insufficient to determine the unexpected results. Moreover, the statement of the unexpected results is based on the Counsel's assertion. Counsel's arguments cannot take the place of evidence. In re Greenfield, 571 F. 2d 1185, 197 USPQ 227 (CCPA 1978).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 1752

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tch *th*
2006-03-22

Thorl Chea
Thorl Chea
Primary Examiner
Art Unit 1752